

## REMARKS

### *1. Status of claims*

After entry of the above amendment, claims 1-23 and 129-130 are pending.

### *2. Withdrawal of claim rejections under 35 U.S.C. § 112*

Applicants acknowledge the Examiner withdrew his previous rejections of claims 1-23 under 35 U.S.C. § 112, second paragraph and claims 1-10, 12-20, and 22-23 under 35 U.S.C. § 112, first paragraph, written description and enablement.

### *3. Claim rejections under 35 U.S.C. § 102(e)*

First, the Examiner rejected claims 1-9, 12-23, and 102 as being anticipated by Hause, *et al.*, US 2003/0228671 ("Hause"). Applicants traverse this rejection as it applies to claims 1-9 and 12-23.

Claim 1 and all claims dependent thereon recite a step of performing selection on a parent yeast strain that contains an exogenous lactate dehydrogenase gene to yield an acid-tolerant (AT) yeast strain that is capable of growing in a minimal medium at a lower pH than the parent yeast strain.

In its various aspects, Hause teaches transformation of yeast cells with an exogenous lactate dehydrogenase gene, yeast cells so transformed, and methods of fermenting a carbohydrate to lactic acid (paragraphs 0008-0012). Hause teaches the use of a selection marker gene, such as genes that confer resistance to an antibiotic or complement nutritional deficiencies (paragraph 0058), which will be understood by the person of ordinary skill in the art to refer to

the known technique of cotransforming a yeast with both the gene of interest and a selection marker gene to monitor uptake of the gene of interest by the yeast. Hause does not teach or suggest a step of performing selection on a parent yeast strain to yield an acid tolerant yeast strain. Therefore, Hause does not teach every element of the present claims, and Applicants request this rejection of claims 1-9 and 12-23 be withdrawn.

Second, the Examiner rejected claims 1-10, 12-23, and 102 as being anticipated by Rajgarhia, *et al.*, US 2004/0029238 ("Rajgarhia"). Applicants traverse this rejection as it applies to claims 1-10 and 12-23.

Claim 1 and all claims dependent thereon recite a step of performing selection on a parent yeast strain that contains an exogenous lactate dehydrogenase gene to yield an acid-tolerant (AT) yeast strain that is capable of growing in a minimal medium at a lower pH than the parent yeast strain.

In various aspects, Rajgarhia teaches transformation of yeast cells with an exogenous lactate dehydrogenase gene, yeast cells so transformed, and methods of fermenting a carbohydrate to lactic acid (paragraph 0010). Rajgarhia teaches the use of a selection marker gene, such as genes that confer resistance to an antibiotic or generate a readily observable phenotype (paragraphs 0168-0171), which will be understood by the person of ordinary skill in the art to refer to the known technique of cotransforming a yeast with both the gene of interest and a selection marker gene to monitor uptake of the gene of interest by the yeast. Rajgarhia does not teach or suggest a step of performing selection on a parent yeast strain to yield an acid tolerant yeast strain. Therefore, Rajgarhia does not teach every element of the present claims, and Applicants request this rejection of claims 1-10 and 12-23 be withdrawn.

4. *Claim rejections under 35 U.S.C. § 103(a)*

The Examiner rejected claims 129-130 as being obvious over Rajgarhia in view of Barnett, *et al.*, *Yeasts: characterization and identification*, 2<sup>nd</sup> ed., Cambridge University Press, ISBN 052135056, pp. 20-28 ("Barnett"). Applicants traverse this rejection.

Claims 129-130 recite a step of performing selection on a parent yeast strain that contains an exogenous lactate dehydrogenase gene to yield an acid-tolerant (AT) yeast strain that is capable of growing in a minimal medium at a lower pH than the parent yeast strain.

Rajgarhia has been discussed above. The cited passage of Barnett discusses identification of yeast strains by various procedures, generally comprising growth of the yeast under various conditions (such as different carbon sources, different temperature, etc.), measurements of various metabolites produced during the growth, and observations of its gross structural features (e.g., ballistoconidia and ascospores, etc.). The observed properties of the yeast can then be used to identify to which of the known genera and/or species it belongs. This is in contrast to the generation of new strains of a previously identified species as is taught by the present claims. Barnett is silent regarding a step of performing selection as described above and provides the skilled artisan with no guidance to arrive at such a step. Therefore, Applicants request this rejection of claims 129-130 be withdrawn.

5. *Conclusion*

The Examiner is invited to contact the undersigned patent agent at (713) 934-4065 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,

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